



3DEXPERIENCE

GLOBAL INDUSTRIAL OPERATIONS

DELIVERING DIGITAL CONTINUITY ACROSS THE VIRTUAL AND
REAL WORLDS OF MANUFACTURING



A NOTE FROM GUILLAUME VENDROUX

DELMIA CEO



Today is a golden age for manufacturing innovation. Unprecedented opportunities now exist to design and build exceptional products that can change our lives to promote well-being across the globe.

DELMIA is committed to helping manufacturers transform their companies to better design, build, and support products and services as remarkable experiences. The first step is to digitize the manufacturing process—from design to build to support. With this vision, manufacturers can better see, control, and synchronize their operations as a global, best-in-class solution.

We can help manufacturers operating in nearly every industry to transform their operations to deliver the right product to the right audience at the right time for the best price.

Our experienced team of industry experts is dedicated to making customers successful in a world of new possibilities.

Guillaume Vendroux

A stylized, handwritten signature in black ink that reads "Vendroux".

DELMIA CEO



DELMIA: DRIVING VALUE FOR MANUFACTURING

DELMIA software and service solutions help companies build products more efficiently, with higher quality, for a lower total cost. We help manufacturers transform their business to create long-lasting value.



Serving an industry demands a solution based on industry experience, delivered and supported to help companies compete globally.

Dassault Systèmes' DELMIA® brand has long served manufacturers in a wide variety of discrete, process, and hybrid industries. These range from the most critical aerospace and defense applications to life sciences to high-volume consumer goods. DELMIA customers include many leading enterprises in the world.

The applications we learn from one industry can be applied to others, continually helping our customers improve manufacturing operations and achieving global consistency and excellence. For example, Lean production began in the automotive industry. Over the years, we have helped other industries with these concepts, including consumer goods customers, in their move toward Lean best practices.

By packaging our applications into Industry Solution Experiences, DELMIA helps ensure that manufacturers can "hit the ground running" to quickly improve operational excellence while navigating today's manufacturing transformation.

Industries We Serve

- Transportation & Mobility
- Aerospace & Defense
- Marine & Offshore
- Industrial Equipment
- High-Tech
- Consumer Packaged Goods & Retail
- Life Sciences
- Energy, Processes & Utilities
- Architecture, Engineering & Construction
- Natural Resources

TODAY'S MANUFACTURING CHALLENGES

Each industry and company has its own unique challenges. In the Age of Experience, however, manufacturers in all sectors now face a growing list of common issues that are reverberating from the plant floor to corporate headquarters. The enterprises that can best meet these hurdles will be the winners in the coming years. Dassault Systèmes offers a robust set of solutions that can help manufacturers to not only overcome these challenges, but to operate with greater agility, innovation, and operational excellence. Leverage these solutions to address the following capabilities.

- **Digitize Operations** – Digitization is transforming manufacturing design and operations. The Fourth Industrial Revolution promises to create big changes—new business models, opportunities, and competition. Manufacturers need to invest wisely for this transformation.



- **Accelerate Innovation** – The pace of business keeps accelerating, along with consumer demand for better, faster goods and services. Manufacturers must innovate and design new offerings and get to market quickly.



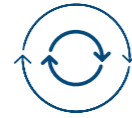
- **Overcome Complexity** – The “one size fits all” concept is gone. Mass production is being replaced with mass customization. Supply chains that are more complex, interwoven, and diverse must be managed, while margins shrink and skilled employees are harder to find.



- **Operate Globally, Serve Locally** – There are crucial decisions about future technology and IT investment that could well determine company survival. Diverse production sites must be managed uniformly, managers must be able to see and control extended supply chains while understanding global customer needs to deliver high-quality products and delightful experiences.



- **Increase Responsiveness** – Since the Industrial Revolution, manufacturing has been one of the most stable sectors. Processes that used to last for years now quickly become obsolete. Consumer demand can change overnight, new technologies are disruptive in a heartbeat, and processes once cast in stone must now be flexible and easy to change. Agility, whether local or global, is now crucial.



- **Drive Operational Excellence** – Competition and consumer demand puts relentless pressure on operational performance. By now, most global manufacturers have addressed the “easy” fixes, such as Lean production. But continuous improvement means never-ending change. Manufacturers need more than a commitment to continuous improvement; they need resources and technology to achieve it.

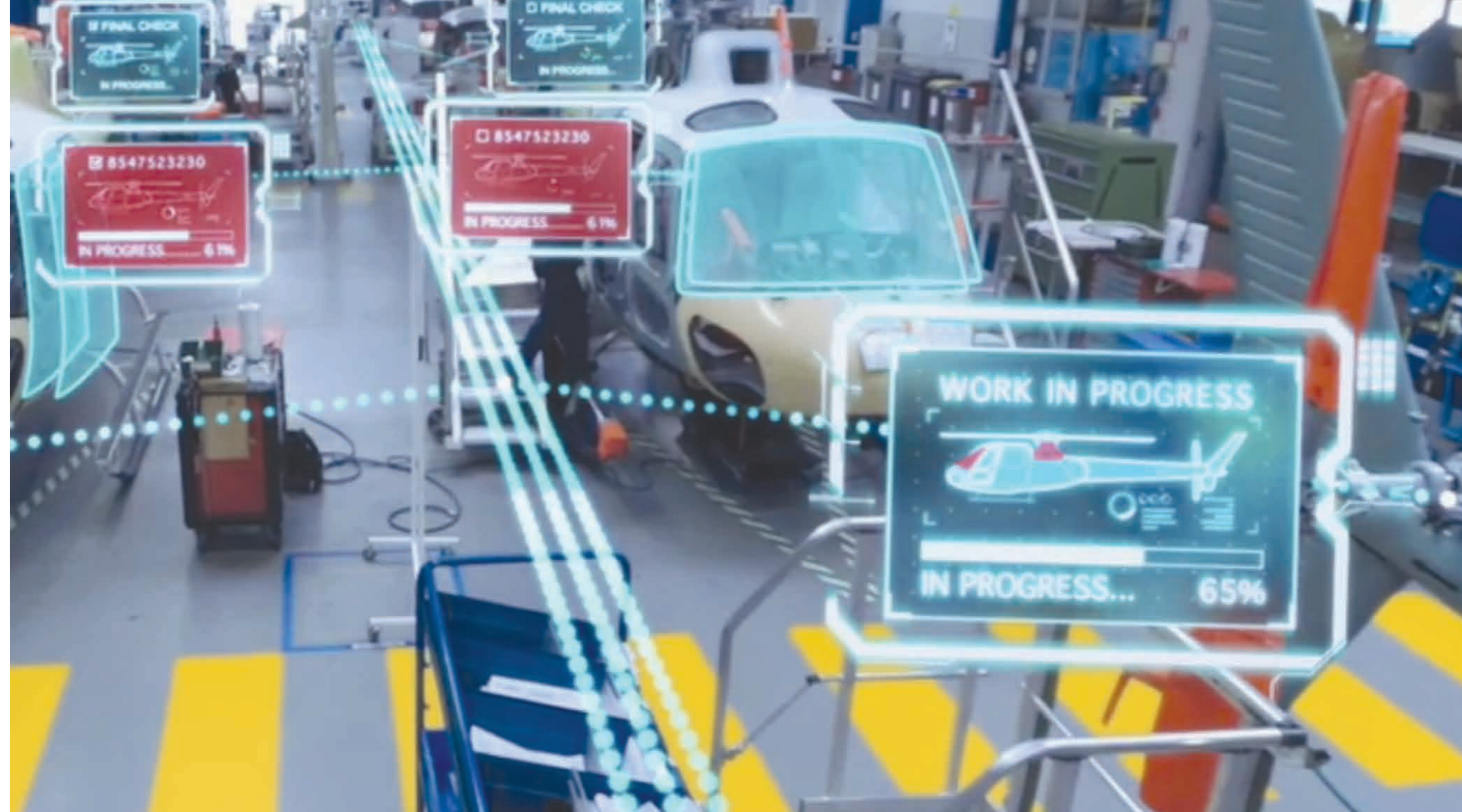


GLOBAL INDUSTRIAL OPERATIONS

CONNECT THE VIRTUAL AND REAL WORLDS OF DESIGN AND PRODUCTION TO ENGINEER, OPERATE, PLAN

In the Age of Experience, customer expectations create enormous pressure for manufacturers to design, build, and support products at a level not previously considered. Now is the time to leverage new technologies to bring together the virtual world of modeling and simulation with the real world of product prototypes and shop floor production. DELMIA offers manufacturers a way to transform their operations with a digital framework that can connect these worlds, and establish a holistic strategy across planning, execution, and optimization to manufacture in the Age of Experience.

- **ENGINEER** – Experience virtually full factory production from design to best meet global demand. Product concepts can be evaluated in advance to identify the best design and process, accelerate new product introduction, and enable rapid change to solve problems or seize market opportunities.
- **OPERATE** – Meet complex operational challenges with a scalable Manufacturing Operations Management (MOM) platform that can provide real-time visibility into manufacturing, synchronize execution processes, and control execution, while providing localization and real-time feedback to executives and planners.
- **PLAN** – DELMIA powers reality-based planning, scheduling, and optimization for complex business processes across all planning horizons. It enables customers to build on their competitive differentiators and plan for profit by capturing their operational reality—down to the last significant detail. DELMIA customers rely on the same integrated supply chain planning and optimization platform to plan their workforce, manufacturing environment, and logistics operations.



DASSAULT SYSTÈMES

3DEXPERIENCE SOLUTIONS FOR MANUFACTURING ENTERPRISES

The vision of what a manufacturing enterprise should be keeps evolving. Today, leading companies want a coordinated, synchronized production landscape they can manage globally to meet fluid, dynamic marketplaces.

As a DELMIA customer, you have access to the family of Dassault Systèmes' brands with capabilities and resources to meet your unique, multifaceted needs for complex scientific innovation, simulation, design, or product planning, with access to CATIA®, SOLIDWORKS®, ENOVIA®, SIMULIA®, EXALEAD® and BIOVIA® capabilities. These resources can help you close the gap between design and production, optimize products and processes, and address challenges across a spectrum of operations.



CATIA is the world's leading solution for product design and experience, used by leading organizations in multiple industries to develop the products we see and use in our everyday lives. CATIA delivers the ability to model any product, and do so in the context of its real-life behavior. CATIA helps manufacturers drive engineering excellence by enabling any type of 3D design for practically all mechanical engineering processes, helping accelerate innovation from 3D sketching to 3D printing. CATIA enables and supports cross-disciplinary systems engineering development from systems definition to modeling, simulation, verification, and business process management. These capabilities can then be applied to production plans to help accelerate new product introduction.



SOLIDWORKS offers extensive 3D software tools to create, simulate, publish, and manage your data. SOLIDWORKS products are easy to learn and use, and work together to help you design better, faster, and more cost-effectively. The SOLIDWORKS focus on ease-of-use allows engineers, designers, and other technology professionals to take advantage of 3D to bring their designs to life. Designers and engineers can focus on their designs, solve complex problems, streamline parallel design processes, and fast-track designs through manufacturing.



ENOVIA offers collaboration software that drives innovation across manufacturing disciplines, including Product Planning and Program Management, Global Product Development, Quality and Compliance, and IP Classification and Protection. ENOVIA enables your innovators to benefit from collaboration. Easy to acquire, quick to learn, and effortless to master, ENOVIA is reliable and robust enough to manage even the most sensitive and mission-critical data.



SIMULIA delivers a scalable portfolio of realistic simulation solutions to explore real-world behavior of products, evaluating performance, reliability, and safety of materials and products early in the design cycle. SIMULIA can help manufacturers better simulate, model, and manage new product and process designs, helping to improve design and collaboration; create, assemble, mesh, model, complete, and learn about simulation models and their results; and improve product design and foster collaboration with specialists. Design optimization helps improve the quality, efficiency, performance, weight, and cost of product designs early in the development process, saving valuable time, resources, and effort to bring new products to market faster.



EXALEAD enables organizations to gather, align, and enrich Big Data—whether internal or external, structured or unstructured, simple or complex—and deliver that information the way users want to receive it. EXALEAD solutions transform large volumes of heterogeneous, multi-source data into meaningful, real-time information intelligence to help users improve business processes and gain competitive advantage.



BIOVIA develops and delivers informatics and technology solutions for scientific innovation in materials and processes, playing a key role in bringing new products to market. BIOVIA solutions help manufacturers model, simulate, manage, and better understand how their products can interact in harmony with nature and life. BIOVIA serves a range of industries, including pharmaceutical and biotechnology; chemical; consumer packaged goods; food and beverage; energy, semiconductor, and electronics; transportation, including automobile and aerospace; and academic and government.



TYING IT ALL TOGETHER WITH DIGITAL CONTINUITY

Digitization is not only transforming manufacturing, it holds the key to managing and leveraging that transformation. Best-in-class enterprises recognize the value of the **3DEXPERIENCE®** platform from Dassault Systèmes to create a Digital Thread from ideation through the final customer experience.

DELMIA solutions are at the center of this transformation. By providing enterprises with a common platform and central data repository, manufacturers have a “digital Single Source of Truth (SSOT)” to holistically manage design and production activities and connect the virtual and real worlds of manufacturing.

Companies can track every detail across global industrial operations on every product and every process, helping drive continuous improvement, innovative design, and effective global traceability.

A Digital Thread can help you achieve new levels of collaboration, operational excellence, and agility. Our customers are ushering in a new approach to how manufacturers operate.

Digitization is the future of manufacturing. DELMIA is empowering manufacturing enterprises to build that future today.



ENGINEERING IN THE DIGITAL AGE

Operational excellence begins with engineering . Today, engineering is best done in the digital realm. Manufacturers use DELMIA to create digital models that virtually simulate products, processes, and factory operations. Manufacturers can better modify processes to quickly respond to the competition or take advantage of the next market opportunity. Improve your planning across a range of operations to accelerate new product introduction or operational expansion.

DELMIA engineering solutions are the first step in creating a Digital Thread of intelligence—extending from the virtual world of design to the real world of production. You can connect these activities to your extended value chain and customers while ensuring that every product specification is available to view and manage for business success.

DELMIA engineering capabilities include:

- COLLABORATIVE MANUFACTURING – Connect manufacturing stakeholders
- PROCESS PLANNING – Design and validate manufacturing processes
- ROBOTICS – Program and simulate industrial robots
- FABRICATION – Program and simulate machining and additive manufacturing
- ERGONOMICS – Design human-centered production and workplace environments

OPERATE WITH EXCELLENCE

Digital engineering is the beginning. Next, every plan must be operated with precision execution on every plant floor across your extended enterprise. A common platform helps ensure unified visibility and control of operations in an Internet of Things (IoT) world while adapting easily to local and regional requirements. This is how DELMIA MOM solutions excel, providing a continuum of visibility, control, and synchronization of operational activities—driven from the digital realm of design to the physical world of production.

- Achieve full process and material synchronization to drive new levels of operational excellence
- Leverage extensive traceability and genealogy data for quality and regulatory requirements
- Manage all aspects of the operations from Industrial Internet of Things (IIoT) aware equipment utilization to factory worker coordination for improving efficiencies
- Tightly coordinate and execute corporate functions across your distributed manufacturing enterprise—and monitor progress via user-defined dashboards to efficiently manage progress

DELMIA operations capabilities include:

- CENTER OF EXCELLENCE – Create, deploy, manage, and improve global best practices
- PRODUCTION – Improve visibility, control, and synchronization of global production processes, schedules, and resources from workers to IIoT equipment
- QUALITY – Unify and enhance quality across manufacturing operations while extracting the data for regulatory compliance and continuous improvement
- WAREHOUSE – Synchronize manufacturing, inventory, and logistics, just in time
- MAINTENANCE – Maximize asset performance and uptime; avoid unplanned disruptions and service disruptions
- LABOR – Increase labor efficiency and productivity
- TRACEABILITY – Contain product and compliance issues quickly, across locations
- INTELLIGENCE – Drive global decision support with real-time visibility and predictive analysis



PLANNING NEVER ENDS

Continuous improvement of manufacturing systems, processes and operations is not a goal; it's a mindset, a commitment, and a challenge that never ends. Manufacturers can meet this challenge through the digitization of design through production and beyond. The virtual world of planning and the physical world of manufacturing are best integrated through a closed loop of advancement and continuous optimization.

The Fourth Industrial Revolution will usher new levels of collaboration to the production process—do your systems have the flexibility and agility to unlock these opportunities? Big data analytics are increasingly relied upon to best leverage manufacturing data across the enterprise. Data-driven decision support can reveal new opportunities for process improvement, but change only occurs within agile systems.

DELMIA planning capabilities include:

- SALES AND OPERATIONS PLANNING – Advanced modeling and optimization capabilities to simulate any scenario in a Sales & Operations Planning (S&OP) cycle, to deliver the most value everytime
- MASTER PLANNING – Drive global decision support with real-time visibility and predictive analysis for Master Planning and Scheduling and Material Requirements Planning
- DETAILED PRODUCTION SCHEDULING – Reduce lead time and inventory by optimizing production within and across production lines, work cells, and assembly operations, while improving asset utilization and throughput





SUCCESS IN RESULTS

- US\$36M inventory reduction and \$4-7M annual efficiency savings in one plant
- 33% reduction in lead time and Engineering Change Orders (ECOs)
- 35% reduction in inventory across 16 plants
- 30% increase in production capacity by optimizing layout and material flow
- 25%+ gain in production throughput
- 400% gain in "Right the First Time"
- 90% reduction in quality issues
- US\$4M annual cost savings from 10% scrap reduction
- 3X reduction of paper use on shop floor
- Zero Parts Per Million (PPM) error rate achieved for shipment processes at 20 sites
- 300% increase in product mix achieved over two year period – without additional capacity
- 700 new products successfully launched per year
- "Time-to-Quality" reduced from 80 units to one
- Eliminated 60+ Field Technical Engineers operating as "Shadow IT"; Center of Excellence (COE) now supports continuous improvement across every plant
- US\$3M cost savings planned by removing 50 point solutions



Dassault Systèmes partner

Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

